

IN THE CLAIMS

1-11. (cancelled)

12. (previously presented) A device for creating hydrodynamic cavitation in fluids comprising:
- a flow-through channel configured to permit a hydrodynamic liquid to flow therethrough, the flow-through channel having an inlet and an outlet;
- a cavitation chamber situated within the flow-through channel between the inlet and the outlet, the cavitation chamber defined by at least one wall and an exit orifice wherein:
- the wall includes a first orifice configured to permit the introduction of a first liquid stream into the chamber and an opposing second orifice configured to permit the introduction of a second liquid stream into the chamber, wherein the first and second orifices are generally aligned with each other and the first orifice has a diameter sufficiently smaller than the second orifice to permit penetration of the first liquid stream into the second liquid stream, and
- the exit orifice is in communication with the outlet;
- a restriction wall in physical communication with the wall and the flow-through channel to prevent the hydrodynamic liquid from exiting the flow-through channel before entering the first and second orifices.

13. (cancelled)

14. (previously presented) The device of claim 12, wherein the wall includes third and fourth opposing orifices that are generally aligned with each other and have different diameters.

15. (cancelled)

16. (cancelled)

17. (previously presented) A method of creating hydrodynamic cavitation in fluids, the method comprising the steps of:
 - passing a hydrodynamic liquid through a flow-through channel having at least one wall;
 - introducing a first liquid stream through a first orifice in the wall to create a first liquid jet;
 - introducing a second liquid stream through a second opposing orifice in the wall to create a second liquid jet that is larger in diameter than the first liquid jet; and
 - creating a high shear intensity vortex contact layer when the first liquid jet interacts with and penetrates the second liquid jet, thereby creating hydrodynamic cavitation.
18. (original) The method of claim 17, further comprising the step of creating and collapsing cavitation caverns and bubbles in the high shear intensity vortex contact layer.
19. (cancelled)